

REMARKS

Claims 1-9 are currently pending, with claim 1 being the only independent claim. Claims 1-9 have been amended. The amendments to claims 1-9 clarify the wording of the claims, and are cosmetic in nature. Reconsideration of the above-identified application, in view of the following remarks, is respectfully requested.

Claims 1-2 and 4-7 stand rejected under 35 U.S.C. §102(b) as anticipated by U.S. Patent No. 6,488,476 ("*Eck*"). Claims 1-7 stand rejected under 35 U.S.C. §102 as anticipated by U.S. Patent No. 4,354,521 ("*Harde*"). Claims 8 and 9 stand rejected under 35 U.S.C. §103(a) as being unpatentable over *Eck* or *Harde*. For the following reasons, reconsideration and withdrawal of these rejections are respectfully requested.

Applicants disclose and claim a feed unit having a baffle that includes first and second chambers and a throttle valve between the two chambers so that fuel can flow between the outer chamber into the inner first chamber on a continuous basis, even after the vehicle appears to have run out of fuel and has caused the engine to stall. The feed rate through the throttle valve, which is not a pump, i.e., it is not driven and does not force fuel through itself but, rather, is an opening that is configured to allow fuel to flow continuously from the second chamber to the first (until an equivalent fuel level is reached in the first and second chambers), but at a rate of flow that would not be great enough to feed the fuel pump sufficiently to keep the engine running as the fuel is being drawn out of the first chamber.

A vehicle thus equipped with the claimed device would stop because the engine would become starved when the fuel has run out. However, fuel would then slowly flow through the throttle valve until the fuel levels in the first and second chambers become equalized. This would ensure that enough fuel would be present at the fuel pump intake if the vehicle operator obtains a

gas can and inserts a relatively small amount of fuel in the fuel tank of the vehicle before attempting to restart the engine. There are conventional fuel tanks that cannot be designed such that they can direct such a relatively small amount of fuel that is obtained from a small gas can to the location of the fuel tank. In such a scenario, the fuel-pump intake within the gas tank may not be submerged under fuel when attempting to restart the engine. The claimed invention provides a solution to the foregoing problem by providing a device that will ensure the fuel-pump intake of a fuel tank is reliably covered with fuel when attempting to restart an engine after it has stalled.

Independent claim 1 recites “a second chamber connected to the first chamber via a valve” and “wherein the valve is a throttle valve, with a volumetric flow of fuel that is restricted by the valve being smaller than the volumetric flow fed by the fuel pump”.

Eck relates to “a fuel feed unit for a motor vehicle, with at least one fuel pump fastened to a holding part and intended for sucking in fuel from a baffle arranged in the bottom region of a fuel tank, and with a suction jet pump provided for feeding fuel out of the fuel tank into the baffle and connected to the fuel pump via a supply line” (see col. 1, lines 5-11). The sole figure of *Eck* depicts a baffle 2. A first chamber 4 is arranged inside this baffle 2. In addition, the first chamber is provided with a fuel pump 10 that sucks fuel out of the first chamber 4. Here, however, the fuel-pump suction opening of the fuel pump 10 is in the vicinity of (i.e., above) the bottom of the first chamber 4. In addition, the opening 15 of *Eck* is a jet-pump suction opening. *Eck* (col. 2, line 67 to col. 3, line 2) teaches that a suction jet pump 6 and a first chamber 4 are provided as a single molded piece. In the *Eck* device, moreover, the arrangement of the first chamber 4 ends at a position that is located above the suction jet pump 6. However, *Eck* fails to teach or suggest “a second chamber connected to the first chamber via a valve,” as recited in amended independent claim 1. In contrast,

valve 16 cited by the Examiner is a suction opening which connects the baffle 2 to the fuel tank 1 in which the baffle is located so that fuel from the fuel tank 1 can be sucked into the baffle.

Even assuming, *arguendo*, that the suction jet pump 6 of *Eck* corresponds to applicants' first chamber (e.g., single molded piece), in such an arrangement the valve 16 in the arrangement of *Eck* connects the first chamber (i.e., suction jet pump 6) to the tank 1. Moreover, there is no valve that is provided for the connection of the first chamber (i.e., the mixing tube of the jet pump 6 or chamber 4) with the second chamber (i.e., baffle 2) of *Eck*. The only connection between the two is via a supply line 12 which operates the suction jet pump 6. This supply line 12 of *Eck* can not be considered to be the claimed throttle valve. Independent claim 1 is therefore not anticipated by *Eck* for at least this reason.

Independent claim 1 further recites the valve is a throttle valve, with a volumetric flow of fuel that is restricted by the valve being smaller than the volumetric flow fed by the fuel pump. Applicants thus claim a throttle valve (14) that restricts volumetric flow, i.e., the volumetric flow is restricted by the valve itself. In contrast, *Eck* discloses a non-return valve 16 which is activated by another device, i.e., the low-pressure of the suction jet pump. If anything, the non-return valve 16 of *Eck* would correlate with applicants valve 11, which is shown in figure 1 of the instant application. *Eck* thus also fails to teach or suggest the claimed throttle valve recited in amended claim 1. Independent claim 1 is therefore patentable over *Eck* for at least this additional reason.

For all of the above reasons, independent claim 1 is not anticipated by *Eck* and the rejection of independent claim 1 as anticipated by *Eck* should now be withdrawn.

Harde, on the other hand, discloses a tank with a container 3 and an inner chamber 4. Opening 9 is the only opening that is in the region of the bottom of the fuel tank arranged between the inner chamber 4 and container 3. As described below, this opening 9 of *Harde* can not be

considered to be the claimed valve between the first and second chambers. *Harde* (col. 2, line 28-32; FIG. 2) teaches that the fluid located in the containers 3 and 4 has the same level. As a result of providing the same level in the different containers, the volumetric flow of fuel that is restricted by the opening 9 is larger than the volumetric flow that is provided by the fuel pump. That is, the inner container and the outer container thus run out of fuel at the same time. As a result, there is no fuel in any of the containers when the vehicle engine stops because it has run out of fuel.

The problem described at pg. 3, lines 14 through 19 in the present application is solved by applicants' claimed device which provides a sufficient amount of fuel needed to keep the fuel-pump suction opening covered with fuel if the tank is emptied and only a small amount of fuel is used to refill the fuel tank. As explained in the background section of the present invention, the refilled amount of fuel is often times insufficient to cover the fuel-pump suction opening in conventional fuel tanks such that it is in contact with the fuel. A larger amount of fuel thus becomes necessary to achieve this desired result. The solution to this problem — as disclosed in the instant application — is a second chamber in connection with a first chamber by a throttle valve, whereby the volumetric flow of fuel that is restricted by the throttle valve is smaller than the volumetric flow fed by the fuel pump. Independent claim 1 thus recites “the valve is a throttle valve, with a volumetric flow of fuel that being restricted by the valve being smaller than the volumetric flow fed by the fuel pump”. There is no teaching or suggestion whatsoever in *Harde* of such a feature. *Harde* (col. 3, lines 31-33) merely explains that “[t]he holes 15 in the separating walls 11 are constructed to provide laminar flow to section B”. There is nothing in *Harde* with respect to the relationship of the volumetric flow of fuel in the valve with respect to the volumetric flow fed by the fuel pump, as recited in independent claim 1.


The claimed smaller volumetric flow of fuel guarantees an amount of fuel in the outer chamber, when the inner chamber runs out of fuel and the vehicle stops. Fuel flows from the outer chamber via the claimed throttle valve that is located in the inner chamber when the vehicle stops. A smaller amount of refilling fuel is thus required to get the fuel-pump suction opening into contact with fuel so that the vehicle can be restarted. *Harde* fails to teach or suggest an arrangement that would encompass such advantageous features in the manner achieved by independent claim 1.

In view of the foregoing, amended independent claim 1 is patentable over *Eck* and *Harde*. Reconsideration and withdrawal of all the rejections under 35 U.S.C. §102(b) and §103(a) are therefore in order, and a notice to that effect is respectfully requested.

In view of the patentability of independent claim 1, dependent claims 2-9 are also patentable over the prior art for the reasons set forth above, as well as for the additional recitations contained therein.

Based on the foregoing amendments and remarks, this application is in condition for allowance. Early passage of this case to issue is respectfully requested.

Respectfully submitted,
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